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10/575,089

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Ran Poliakine

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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

MAIL DATE

DELIVERY MODE

10/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/575,089

Applicant(s)

POLIAKINE ET AL.

Examiner

Thoi V. Duong

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2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 ~~is~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: claim 1 recites the limitation "the other layers" in line 9. There is insufficient antecedent basis for this limitation in the claim.
2. Claim 15 is objected to because of the following informalities: claim 15 does not indicate what claim it depends on. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 5, 7, 9, 10, 12, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubota et al. (Kubota, US 6,147,726).

As shown in Fig. 8, Kubota discloses a structurally supported LCD media comprising:

an initial structural layer 92;

a plurality of addressable layers 95-97, each of which having predetermined optical properties (col. 28, line 44 through col. 29, line 54), and the layers have LC there-between and have narrow conductive pathways 100-103, 108, 109 on opposing faces which respectively address a predetermined LC volume between the pathways,

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and the pathways are respectively accessible for interconnection with a LC electric pulse driving means;

a final structural layer 91/94 being of predetermined optically transparency to frequencies of light scattered and/or reflected by at least one of the other layers (col. 28, lines 38-44); and

means for sealing the initial layer 92 to the final layer 91/94 with the addressable layers 95-97 there-between, and having there-through a continuation of said respective accessible interconnection (see also Fig. 1; col. 20, lines 35-37).

Re claim 4, the initial structural layer (as item 2 in Fig. 1) is glass (col. 20, lines 24-30).

Re claim 5, the initial structural layer is selected from the list: metal, plastic, and composite material (col. 20, lines 24-30).

Re claims 7 and 9, as shown in Fig. 8, at least one of the plurality of addressable layers 95-97 includes a layer made from a plastic film or sheet (as layers 5, 6, 7 in Fig. 1, col. 20, lines 32-35).

Re claim 10, the narrow conductive pathways are selected from Indium Tin Oxide (col. 20, lines 24-30).

Re claim 12, the final structural layer 91 is a glass sheet (col. 20, lines 24-30).

Re claim 13, the initial structural layer and the plurality of addressable layers and the final structural layer in combination provide a predetermined measure of rigidity that is compliant with a predetermined measure of integrity for the initial layer to final layer sealing (col. 35, lines 12-32),

Re claim 15, the structurally supported LCD media substantially as described and illustrated above has means for sealing the initial layer to the final layer as shown in Fig. 1.

5. Claims 1-10, 12, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (Matsumoto, US 6,844,957 B2).

As shown in Fig. 2 (see also Fig. 1A), Matsumoto discloses a structurally supported LCD media comprising:

- an initial structural layer 52 (col. 3, lines 47-61);

- a plurality of addressable layers 51, 53, each of which having predetermined optical properties (col. 4, line 67 through col. 5, line 13), and the layers 51, 53 have LC there-between and have narrow conductive pathways on opposing faces which respectively address a predetermined LC volume between the pathways, and the pathways are respectively accessible for interconnection with a LC electric pulse driving means (col. 3, lines 47-61 and col. 10, lines 51-54);

- a final structural layer 55 being of predetermined optical transparency to frequencies of light 64 reflected by the metal layer 62 since the final structural layer is a cover glass of a color reflective display (col. 3, lines 28-29 and col. 4, lines 61-65); and

- means 134 for sealing the initial layer 81 to the final layer 84 with the addressable layers 82, 83 there-between, and having there-through a continuation of said respective accessible interconnection as shown in Fig. 9 (col. 10, lines 16-42).

Re claim 2, as shown in Fig. 1, the initial structural layer 33 is a rigid material (glass) having an inert surface facing the final layer 32 (col. 3, lines 26-39),

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wherein, re claim 3, the inert surface is an applied coating/deposition 62 on the surface (col. 4, lines 56-65).

Re claim 4, the initial structural layer 33 is glass (col. 3, lines 26-39).

Re claim 5, the initial structural layer 33 is selected from the list: metal, plastic, and composite material (col. 5, lines 25-27).

Re claim 6, as shown in Fig. 2, the initial structural layer 52 has a mirror to reflect color lights as a surface preparation of predetermined spectral properties facing the final layer 55.

Re claim 7, at least one of the plurality of addressable layers 30 and 31 is made from a plastic film (col. 5, lines 2-5).

Re claim 8, at least one of the plurality of addressable layers is made from a glassy film (col. 4, line 67 through col. 5, line 1).

Re claim 9, at least one of the plurality of addressable layers is made from a plastic sheet (col. 5, lines 2-5).

Re claim 10, the narrow conductive pathways are selected from Indium Tin Oxide (col. 10, lines 51-54).

Re claim 12, the final structural layer 32 is a glass sheet (col. 3, lines 28-29).

Re claim 13, as shown in Fig. 9, the initial structural layer 81 and the plurality of addressable layers 82, 83 and the final structural layer 84 in combination provide a predetermined measure of rigidity that is compliant with a predetermined measure of integrity for the initial layer to final layer sealing (col. 10, lines 16-42).

Re claim 15, the structurally supported LCD media substantially as described and illustrated above has means 134 for sealing the initial layer to the final layer as shown in Fig. 9.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 3 and 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (Kubota, US 6,147,726) in view of Doane et al. (Doane, US 7,170,481).

As shown in Fig. 8 of Kubota, the initial structural layer 92 has as a surface preparation of predetermined spectral properties (an inert surface) as a light-absorbing layer 93 to absorb the unwanted color light. However, this surface preparation does not face the final layer 91 as recited in claims 2, 3 and 6.

As shown in Fig. 2b, Doane has a light absorbing layer 16 formed right below an electrode 20 on a surface of a substrate 20 to absorb unwanted light passing through the liquid crystal layer 18 (col. 19, lines 14-21).

Thus, it would have been obvious to one having ordinary skill in the art to form the light-absorbing layer on top of the initial structure layer as a surface preparation of predetermined spectral properties facing the final layer to achieve predictable results of absorbing the unwanted (color) light passing through the liquid crystal layer (col. 19, lines 14-21).

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8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (Kubota, US 6,147,726) in view of Matsumoto et al. (Matsumoto, US 6,844,957 B2).

As shown in Fig. 8, Kubota discloses that the addressable layers 95-97 comprises the plastic films. However, according to the application, it is obvious that the addressable layers can be made of glass or polymer as shown in Fig. 2 of Matsumoto for achieving a low cost display (see Abstract and col. 10, lines 43-50).

9. Claims 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (Matsumoto, US 6,844,957 B2) in view of Yamakawa et al. (Yamakawa, US 6,697,039 B1).

Matsumoto discloses a structurally supported LCD media that is basically the same as that recited in claims 11 and 14 except for at least two adjacent layers of the plurality of addressable layers being separated by precision width gapping spacers selected from the list: micro-particles, deposition members, at least one mesh, a randomized network layer, a lattice structured network layer, and a highly perforated membrane.

As shown in Fig. 6, Yamakawa discloses a structurally supported LCD media comprising at least two adjacent layers 12 being separated by precision width gapping spacers 15 selected from the list: micro-particles, deposition members, at least one mesh, a randomized network layer, a lattice structured network layer, and a highly perforated membrane (col. 7, lines 4-42).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the structurally supported LCD media of

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Matsumoto with the teaching of Yamakawa by forming precision width gaping spacers between two adjacent layers of the addressable layers in order to improve gap accuracy and reduce unevenness in voltage impression or in display colors (col. 7, lines 34-42).

10. Claims 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (Kubota, US 6,147,726) in view of Yamakawa et al. (Yamakawa, US 6,697,039 B1).

Kubota discloses a structurally supported LCD media that is basically the same as that recited in claims 11 and 14 except for at least two adjacent layers of the plurality of addressable layers being separated by precision width gaping spacers selected from the list: micro-particles, deposition members, at least one mesh, a randomized network layer, a lattice structured network layer, and a highly perforated membrane.

As shown in Fig. 6, Yamanaka discloses a structurally supported LCD media comprising at least two adjacent layers 12 being separated by precision width gaping spacers 15 selected from the list: micro-particles, deposition members, at least one mesh, a randomized network layer, a lattice structured network layer, and a highly perforated membrane (col. 7, lines 4-42).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the structurally supported LCD media of Kubota with the teaching of Yamakawa by forming precision width gaping spacers between two adjacent layers of the addressable layers in order to improve gap accuracy and reduce unevenness in voltage impression or in display colors (col. 7, lines 34-42).

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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong – Primary Examiner

September 20, 2007

